UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,289	10/25/2001	Steven I. Ross	1280.2003-000	8162

			EXAMINER
21005	7590	10/26/2006	HARPER, V PAUL

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/004,289	ROSS ET AL.
	Examiner	Art Unit	
	V. Paul Harper	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 September 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.   Claims 1, 2, 4, 5, 7-9, 11, 12, 14-16, 18, 19, 21 and 22 are rejected under 35

U.S.C. 102(b) as being anticipated by Young ("Layering Predictions: Flexible Use of

Dialog Expectations in Speech Recognition" IJCAI 1989), hereinafter referred to as

Young..

Regarding **claim 1**, Young teaches the flexible use of dialog expectation in

speech recognition. Young's teachings include:

•   generating a grammatic specification suitable for processing the spoken utterances

based on a domain model for a speech-enabled application and based on a syntax

template for the domain model, the domain model providing the grammatic specification

with built-in meaning (abstract, dynamically generates a grammar; §3.1 Layered

predictions; p. 1545, col. 2, ¶4, item 3, semantic knowledge ...; Fig. 1, example of goal

state schema).

•   processing a recognition message, based on one of the spoken utterances

recognized by a speech engine, to produce an initial semantic representation of the

recognized spoken utterance based on the grammatic specification and the domain

model (§4, p. 1547, col. 1, steps in achieving goal state; §5, tested with speech

recognizer); and

• providing a set of propositions that represent the recognized spoken utterance, the

set of propositions based on the initial semantic representation and the domain model

(p. 1547; goal state is achieved results are produced; §5.3, recognition performance;

§6, pragmatic predictions).

Regarding **claim 2**, Young teaches everything claimed, as applied above (see

claim 1). In addition, Young teaches the step of defining generating a grammatic

specification comprises the steps of:

• receiving an ontological description of the domain model based on entities, classes,

and attributes (p. 1545, col. 2, ¶4, "used the following knowledge sources to derive

predictions" domain model; item 3, "semantic knowledge about the application doman's

object, attributes and their interrelations (a domain knowledge base)");

• receiving syntax templates for the domain model specifying legal word sequences

based on the ontological description (p. 1545, col. 2, ¶2, "user models were then used

to construct control schemas which specified which goal states were exclusive"; p.

1547, col. 1, during the steps to achieve predictions, step 5, "find the associated

grammar networks associated with these concepts and generate a layer of

predictions"); and

- combining the ontological description, a lexicon, and the syntax templates to generate the grammatic specification (p. 1545, col. 2; p. 1546, col. 1, Fig. 1, goal state schema [grammatic specification]).

Regarding **claim 4**, Young teaches everything claimed, as applied above (see claim 1). In addition, Young teaches "the domain model comprises an ontological description based on entities, classes, and attributes" (p. 1545, col. 2, item 3, "semantic knowledge about the application domain's objects, attributes and their interrelations (a domain knowledge base)").

Regarding **claim 5**, Young teaches everything claimed, as applied above (see claim 1). In addition, Young teaches "the domain model comprises a syntax specification and the grammatic specification is based on the syntax specification" (see claim 1, rejection; p. 1544, col. 2, ¶3, knowledge sources are used to predictively to dynamically restrict the sequences of words; p. 1545, col. 1, ¶1 grammars guide word transitions and are associated with goal states; p. 1546, Fig. 1, goal state schema contains syntax information

Regarding **claim 7**, Young teaches everything claimed, as applied above (see claim 1). In addition, Young teaces "the initial semantic representation is based on a frame structure representing the recognized spoken utterance" (abstract, p. 1543, col. 2, ¶2, the predictions [semantic representations] are based in the inputs to the recognizer;

p. 1547; col. 1, steps 1-7, in particular step 5 indicates the application of the grammar

network to generate predictions).

Regarding **claim 8**, this claim has limitations similar to claim 1 and is rejected for

the same reasons.

Regarding **claim 9**, this claim has limitations similar to claim 2 and is rejected for

the same reasons.

Regarding **claim 11,** this claim has limitations similar to claim 4 and is rejected

for the same reasons.

Regarding **claim 12**, this claim has limitations similar to claim 5 and is rejected

for the same reasons.

Regarding **claim 14**, this claim has limitations similar to claim 7 and is rejected

for the same reasons.

Regarding **claim 15**, this claim has limitations similar to claim 1 and is rejected

for the same reasons.

Regarding **claim 16**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 18**, this claim has limitations similar to claim 4 and is rejected for the same reasons.

Regarding **claim 19**, this claim has limitations similar to claim 5 and is rejected for the same reasons.

Regarding **claim 21**, this claim has limitations similar to claim 7 and is rejected for the same reasons.

Regarding **claim 22**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

2.   Claims 3, 6, 10, 13, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of well known prior art (MPEP 2144.03).

Regarding **claim 3**, Young teaches everything claimed, as applied above (see claim 2). In addition, Young teaches "the domain model comprises a lexicon of words associated with the speech-enabled application, ..., and wherein the grammatic specification is based on said lexicon" (p. 1544, col. 2, ¶4, "to dynamically modify the

search space for words"; p. 1545, col. 1, ¶1 "... generate a set of possible concepts

which could be spoken in the next utterance", item 4, "domain's objects, attributes and

their interrelations"; p. 1547, col. 1, step 5, "find the associated grammar networks

associated with these concepts").

But Young does not specifically teach "..., said lexicon providing synonyms and

parts of speech information for elements of the ontological description, ..." However,

the examiner takes official notice of the fact that the use of synonyms (when generating

concepts) and parts of speech (when finding associated grammar networks) was well

known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify Young as described above, because these

are common techniques used when applying a language model to the results of a

speech recognizer.

Regarding **claim 6**, Young teaches everything claimed, as applied above (see

claim 1). But Young does not specifically teach "the grammatic specification is a Backus

Naur Form grammar." However, the examiner takes official notice of the fact that the

use of Backus Naur Form as a way to specify a grammar was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify Young by using the Backus Naur From

notation, because Backus Naur Form (BNF) is a widely used (and thus understood)

notation for representing grammars.

Regarding **claim 10**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to claim 6 and is rejected for the same reasons.

Regarding **claim 17**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 20**, this claim has limitations similar to claim 6 and is rejected for the same reasons.

Citation of Pertinent Art

3.   The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Carasik et al. ("Towards a Domain Description Grammar: An Application of Linguistic Semantics" ACM Sigsoft, Software Engineering Notes, Oct. 1990) teach the domain specific grammars applied to natural language.

- Kamm et al. ("Design and Evaluation of Spoken Dialog Systems" Proc. 1997 IEEE Workshop on Speech Recognition and Understanding, 1997) describe a high performance speech recognition system with language modeling and appropriate semantic representations.

- Young et al. ("High Level Knowledge Sources in Usable Speech Recognition Systems" Communications of the ACM, February 1989) describe a dialog system using speech recognition and dynamically generated expectations.

- Zadrozny et al. (U.S. Patent 5,937,385) describes a system that revises grammars for speech recognizers using Backus Naur Form notation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Paul Harper whose telephone number is (571) 272-7605. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/19/06

V. Paul Harper
Patent Examiner
Art Unit 2626